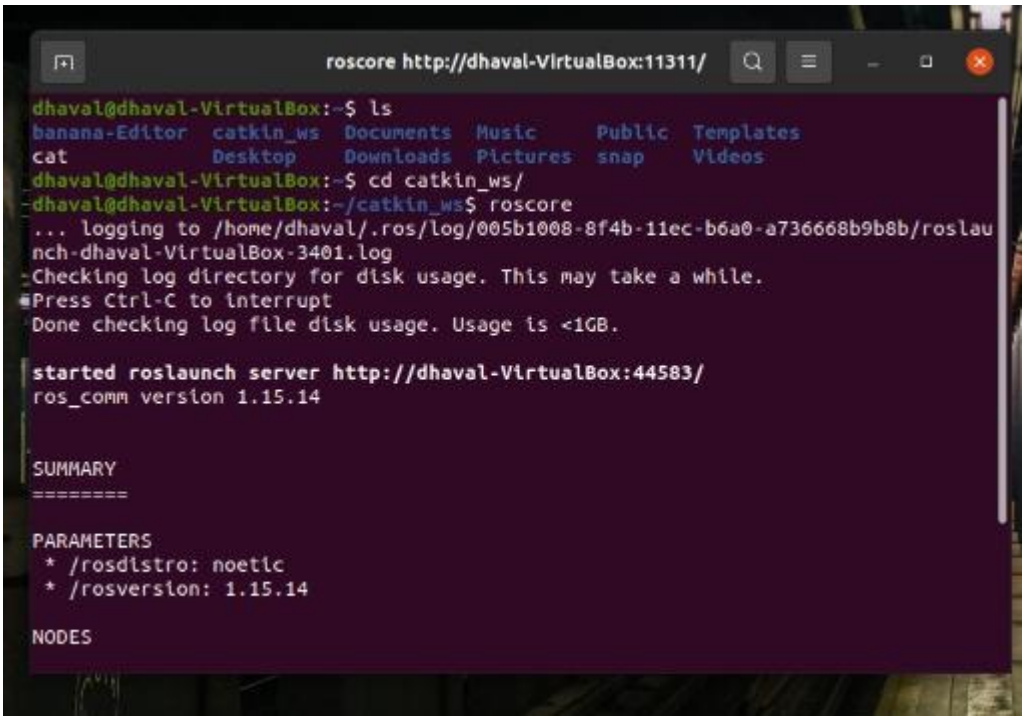
IE410 : Introduction to Robotics

Lab3 Report

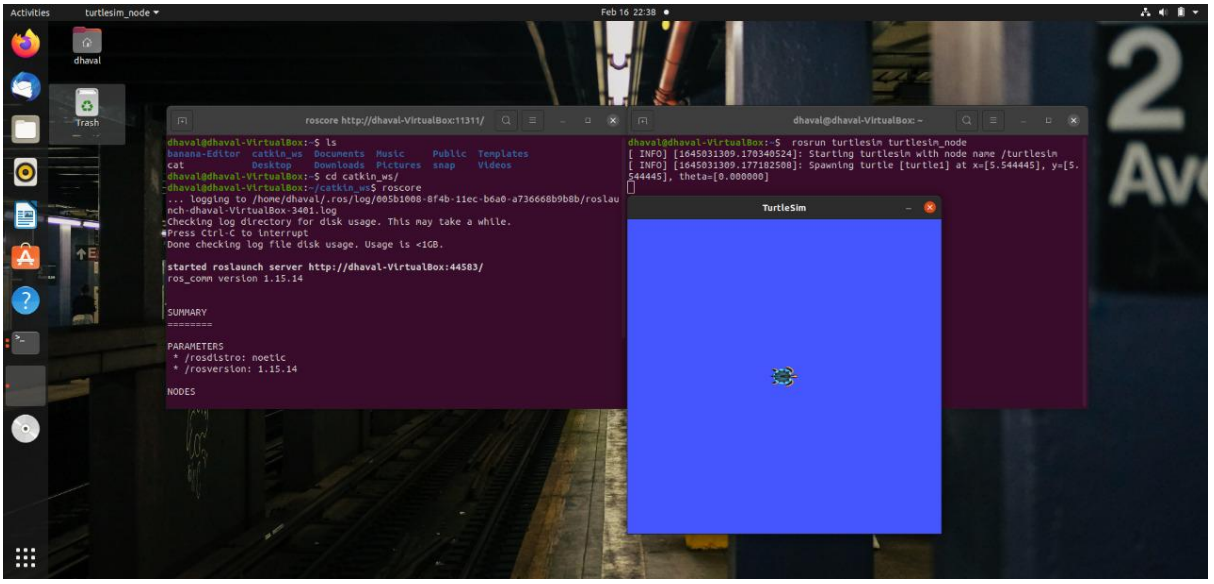
Team M410

201901011 - Himanshu Dudhatra
201901024 - Dhavalsinh Raj
201901100 - Shubham Patel
201901145 - Gargey Patel

- First we start the roscore by
  $ roscore

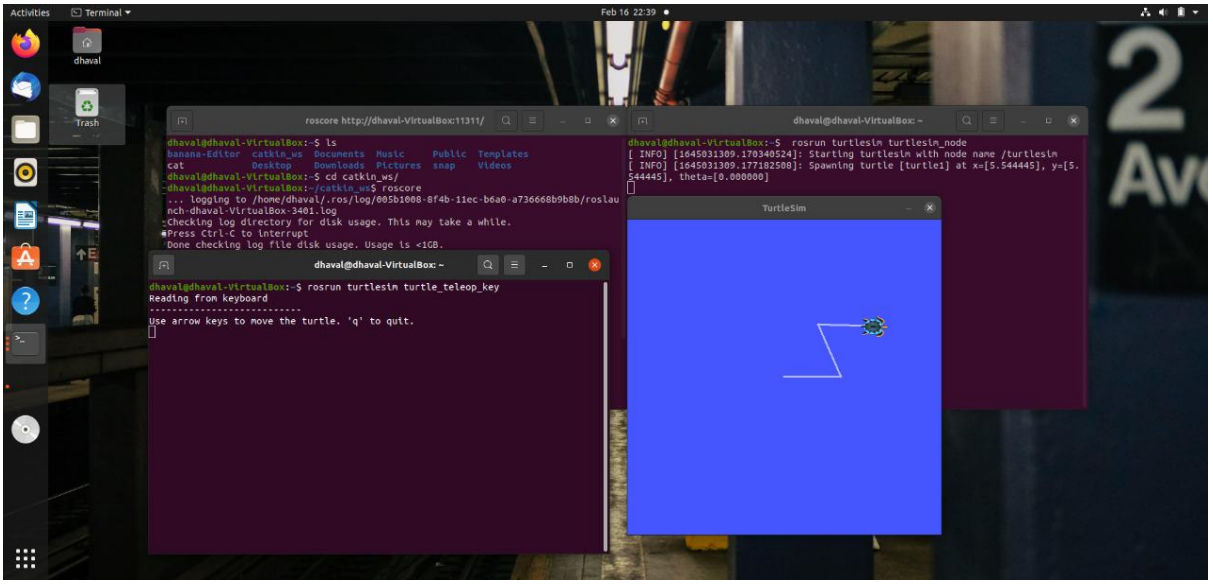


- Then we start turtlesim node by command
  $ rosrun turtlesim turtlesim_node



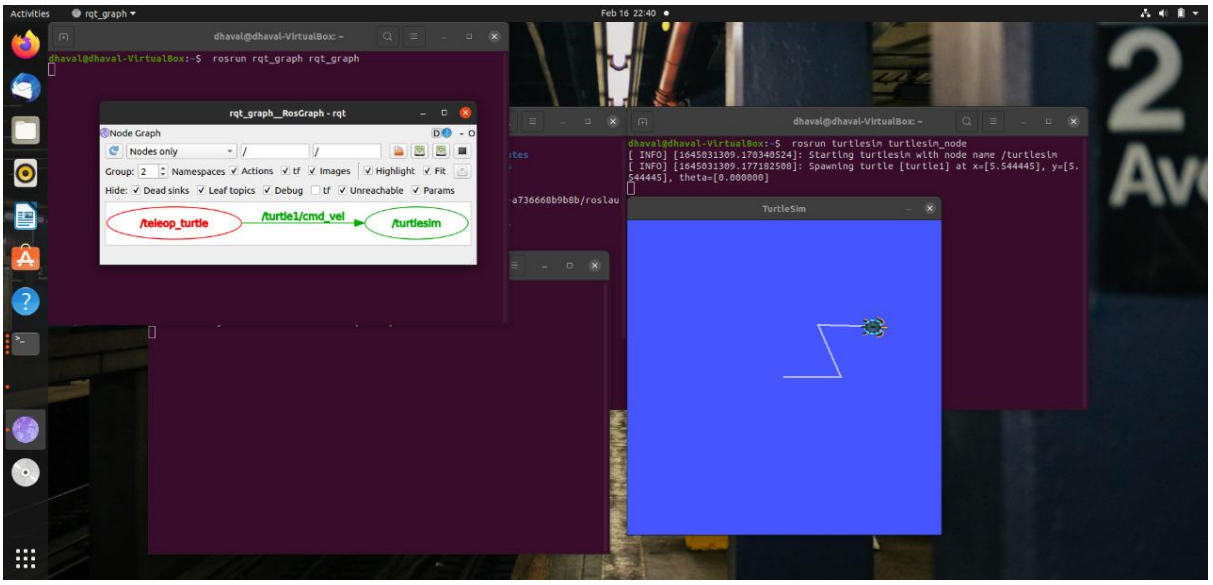
- Now to control the turtle with keys we type
  $ rosrun turtlesim turtle_teleop_key

  We can try to move turtle with keys and we can move turtle in an direction



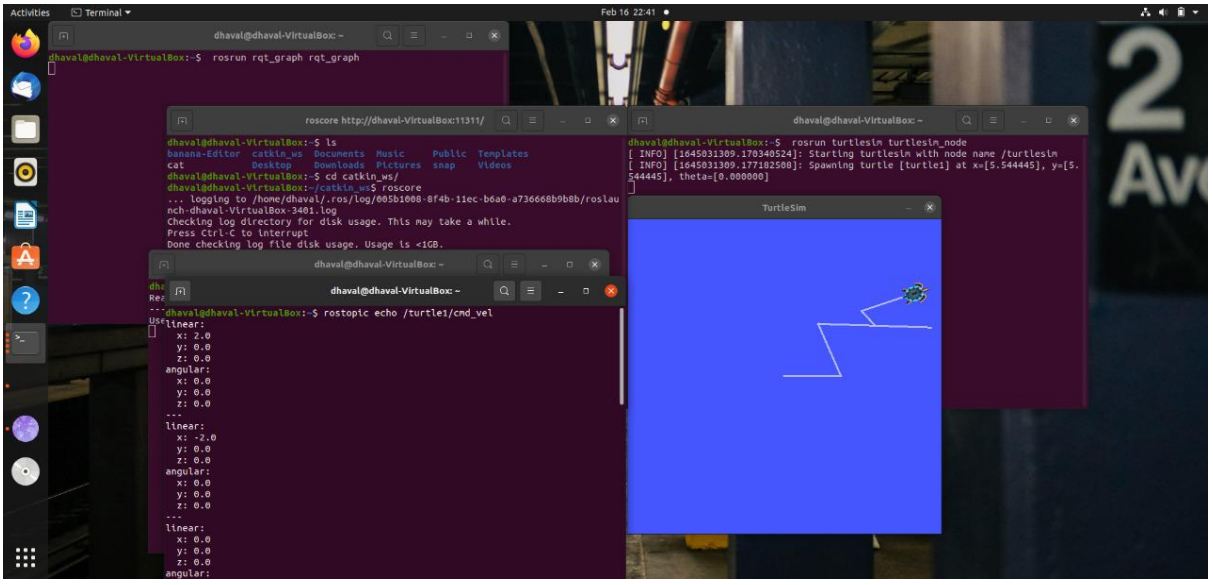
- To shows what is going on in the system we will create an rqt_graph and for this process is
  $ sudo apt-get install ros-neotic-rqt
  $ sudo apt-get install ros-neotic-rqt-common-plugins

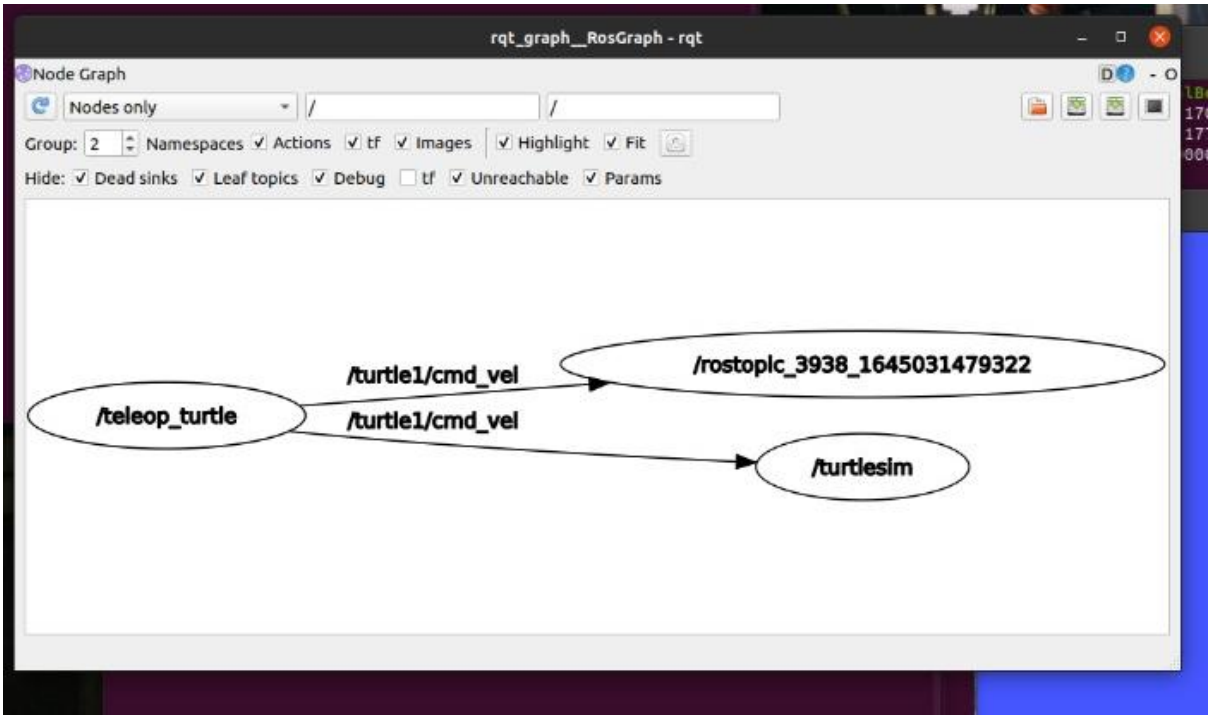
- Now we run the rqt_graph and for this we write command
  $ rosrun rqt_graph rqt_graph



- To find about rostopics we write command
  $ rostopic -h

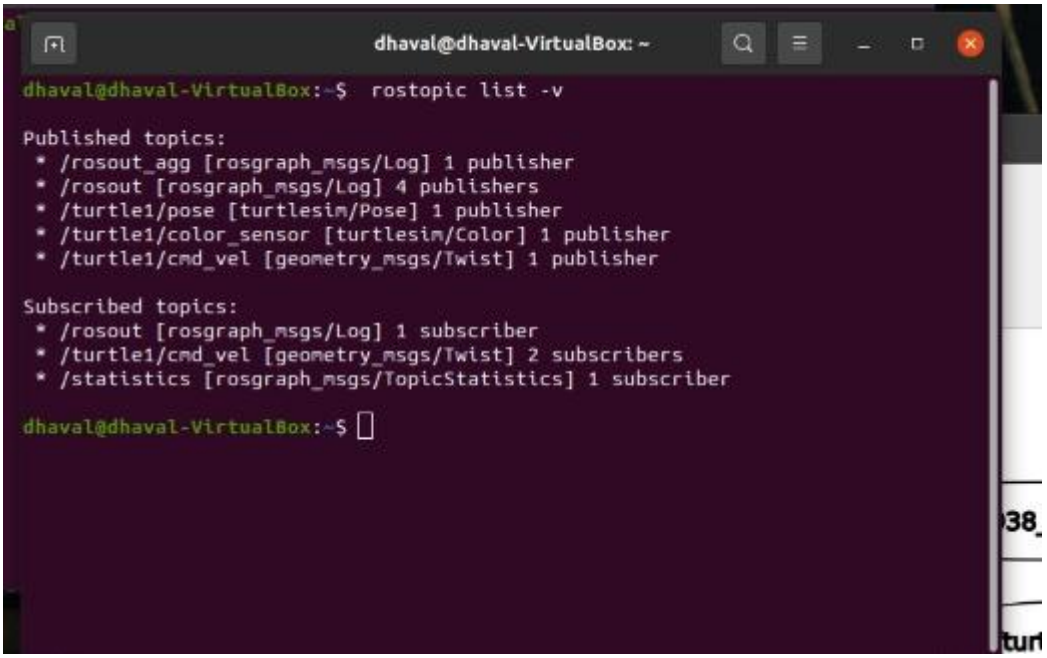
- Now we will use rostopic echo (from above list which we get from $rostopic -h) to print the massage that are published and for that we write command
  $ rostopic echo /turtle1/cmd_vel





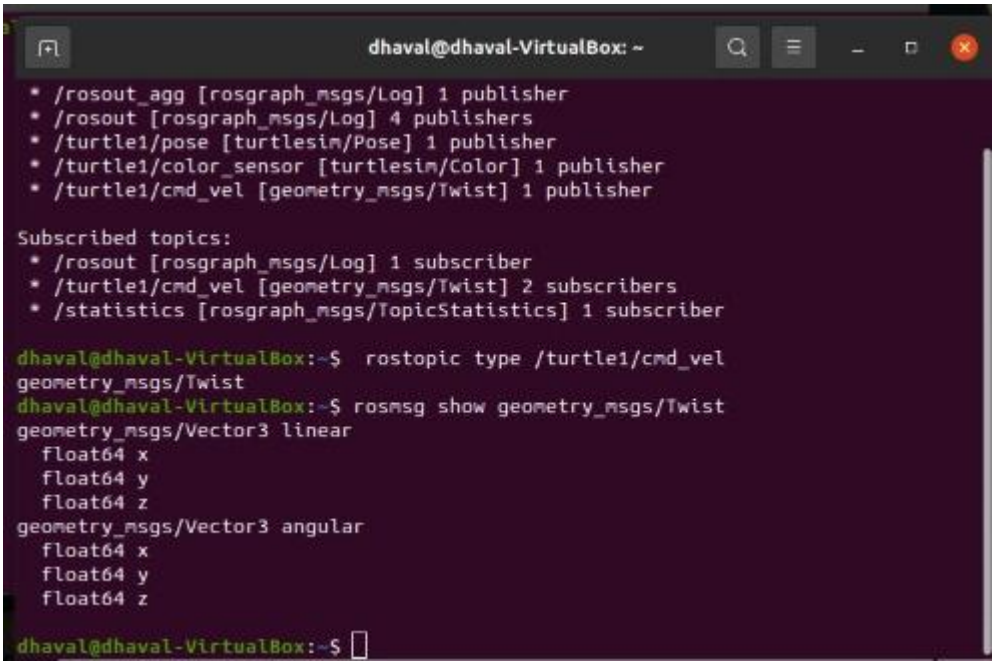
- By rostopic list command we can list all current topics

  $ rostopic list -v

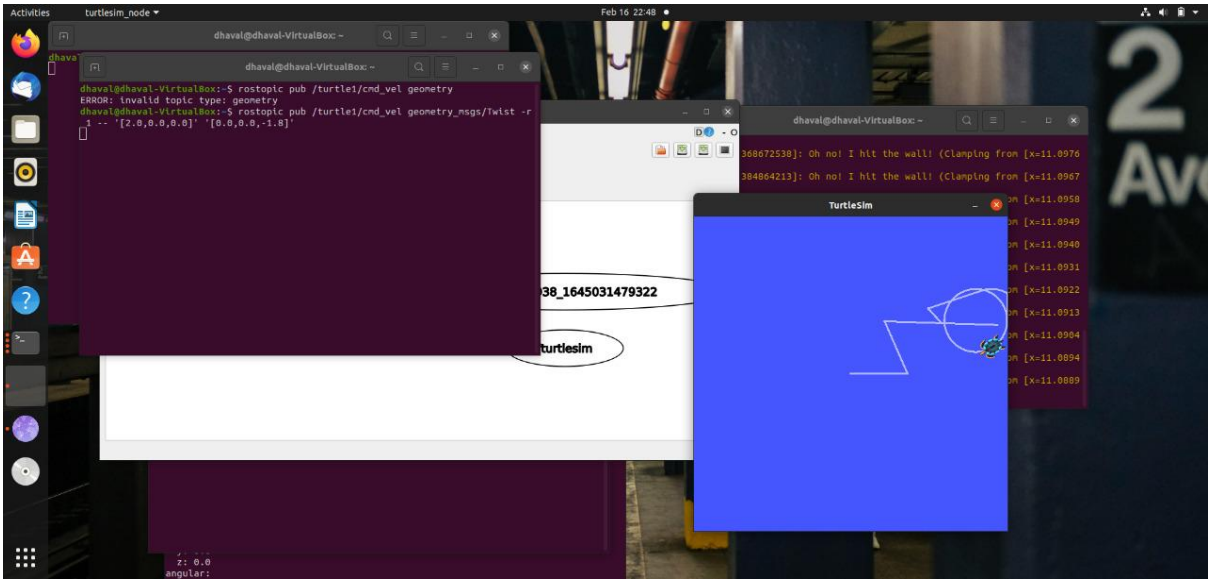


- We can get the message type of a particular rostopic by command
  $ rostopic type /turtle1/cmd_vel

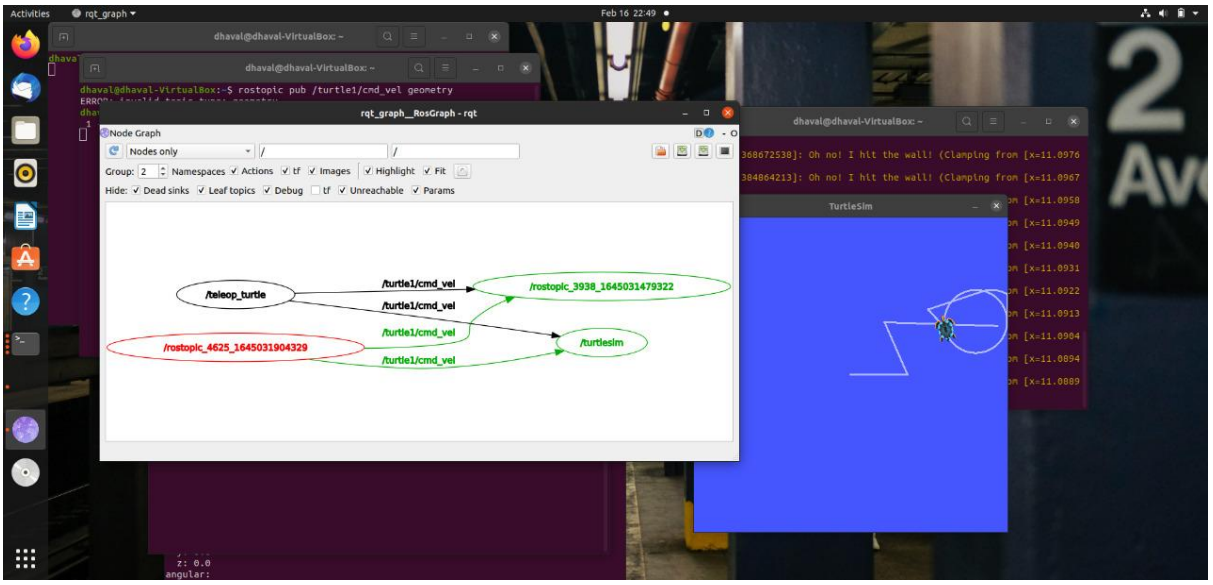
  And we can also get additional information about the massage by command
  $ rosmsg show geometry_msgs/Twist



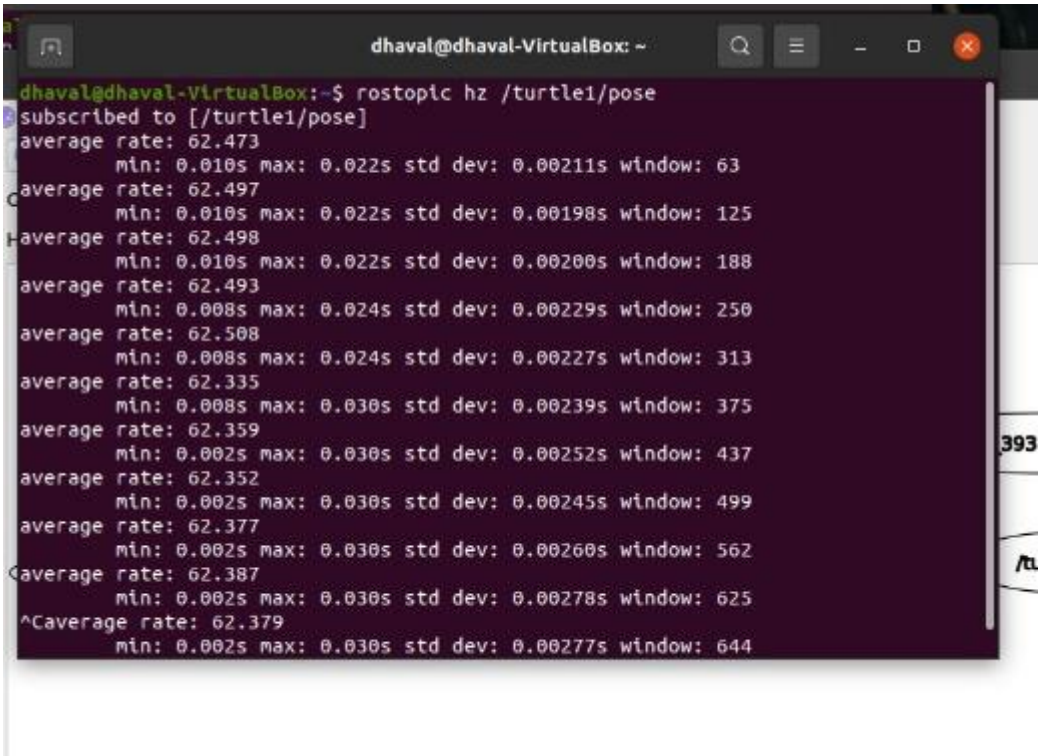
- To publish the message repeatedly we can write command
  $ rostopic pub /turtle1/cmd_vel geometry_msgs/Twist -r 1 - -
‘[2.0,0.0,0.0]’ ‘[0.0,0.0,-1.8]’



- Now we again look at rqt_graph to see commands that controlling turtle



- Now to look at the frequency of message we write command
  $ rostopic hz/turtle1/pose



- We can see data of a particular topic by command
  $ rosrun rqt_plot rqt_plot